

Missouri Anemometer Loan Program - Description

Missouri Department of Natural Resources
Energy Center



Background

One of the most crucial pieces of information needed when evaluating the wind energy potential of any given area or site is a reliable measurement of the wind resource. General knowledge about Missouri's wind energy resources is based either on a limited number of site-specific wind measurement programs or on a coarse, outdated national atlas produced by the federal government in the mid-1980s. This information has resulted in only limited insights into the complex distribution of wind resources throughout the state. Consequently, government planners, energy service companies, private developers, businesses and homeowners have little quantitative information from which to make informed decisions about where to site wind generators.

To determine the wind resources in Missouri, the Energy Center has anemometers available, on loan, to help businesses, schools, developers, farmers and homeowners determine if there is enough wind energy for cost-effective investment and use of a wind turbine. The Energy Center was able to purchase the anemometers with funding support from the U.S. Department of Energy's Wind Powering America initiative.

Introduction

The Missouri Department of Natural Resources Energy Center's Anemometer Loan Program is part of an effort to help Missouri landowners make informed decisions about the siting and use of wind turbines. This program allows participants to borrow anemometers and the equipment needed for installation so they can measure the wind resource. By significantly reducing the cost of quantifying the wind resource on these lands, we expect that the public and private sectors will be encouraged to install wind turbines.

Borrower Eligibility Requirements

The borrower must provide proof of ownership of the property on which the anemometer will be placed or provide written exclusive authorization from the property owner. All anemometers must be sited within the state of Missouri. For other areas outside the state of Missouri, contact the respective state energy office.

Borrowing Process

The loan program consists of the following steps:

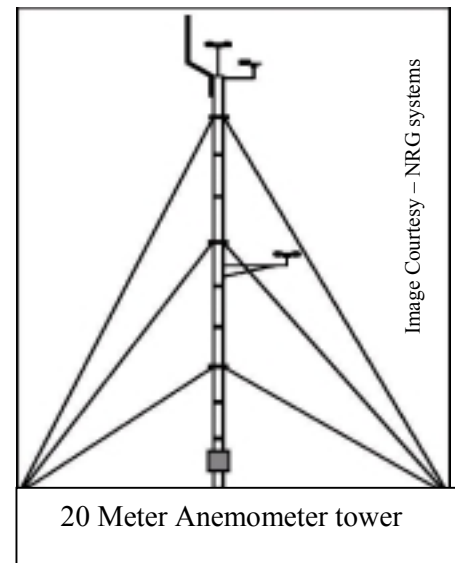
- Application and approval
- Loan agreement
- Anemometer installation and maintenance
- Data collection and analysis
- Return of the anemometer and tower

Application and Approval

Applications will be available soon on this Web page:
<http://www.dnr.state.mo.us/oac/forms>

The purpose of the application is to verify the following:

- The borrower has identified a potential site with a favorable combination of good wind resource, road access, transmission proximity (if applicable) and land ownership;
- The borrower will replace the data plugs monthly;
- The borrower has envisioned a viable project concept if the wind resource is sufficient.



Loan Agreement

Upon receiving approval to borrow an anemometer, a representative should contact the department to execute a loan agreement and arrange delivery of the 20-meter NRG-Now System - Wind Explorer Kit. The loan period will be up to 14 months. This should allow enough time for equipment installation, collection of 12 months of data and disassembly.

The Equipment

Each set consists of an NRG Wind Explorer anemometer, wind direction vane, data logger and 20-meter (66-foot) tower. The data logger collects and saves wind speed and direction data.



Wind Vane

(Image courtesy – NRG systems)



Data Logger

Anemometer Installation

To erect the tower, an installation kit consisting of a gin pole (temporary attachment to base of tower) and winch will be used. If for any reason the tower must be lowered, the borrower must contact the department. The equipment has a good reputation for reliability so it is unlikely this will be necessary prior to the end of the data collection period. The Energy Center will provide on-site guidance in the installation of the tower and operation of the data logger.

Processing Wind Data

The NRG Wind Explorer anemometer continuously collects wind speed and direction data that is stored as 10-minute average data in a removable data plug. Each anemometer will include two (2) data plugs. Each plug will hold roughly seven months of ten-minute data. However, to minimize the duration of any data collection errors, the user must replace the plugs monthly. Each time a plug is replaced, the property owner will be asked to mail the plug containing data to the Energy Center at the address below. The department will publish a

report at the end of the monitoring period and a copy will be provided to the borrower.

Please be advised that all wind speed data will be in the public domain and available over the Internet.

Agency Roles and Responsibilities

The department selects qualified borrowers, manages the lending of the anemometers and offers technical support on siting, installation and operation of the anemometers. The department will also provide analysis of the collected wind speed data. For information contact:



Missouri Department of Natural Resources
Outreach and Assistance Center- Energy Center
1659A East Elm Street
Jefferson City, MO 65101
Attention: Rick Anderson (1-800-361-4827)

Applications will be available soon
on this Web page:
<http://www.dnr.state.mo.us/oac/forms/>
or contact Rick Anderson at this
address for an application